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NEW CHILOPODS FROM MEXICO AND THE WEST INDIES.

By Ralpe V. Chamberlin.

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# No. 8.-New Chilopods from Mexico and the West Indies. 

By Ralph V. Chamberlin.

## SCOLOPENDROMORPHA.

## CRYPTOPIDAE.

TIDOPS, gen. nov.
Body composed of twenty-three leg-bearing segments. Eleven pairs of elliptic spiracles, one pair being present on the seventh segment.

Head overlapping the first dorsal plate.
Antennae short, flattened; consisting of thirteen articles.
Claws of prehensors dwarfed. None of joints of prehensors armed.
Prosternum bearing two long dentiform processes.
First dorsal plate with a transverse cervical sulcus. Other dorsal plates longitudinally bisulcate; most of them also with distinct lateral longitudinal sulci and, especially in the posterior region, with a median keel more or less set off by furrows. Last dorsal plate laterally margined.

Ventral plates with no distinct longitudinal furrows or sulci.
Coxopleura extended caudad in a long, acutely one-pointed process.
Tibiae unarmed or with only a subspinescent bristle at distal end. Tarsi, excepting of last two pairs of legs, undivided. Tarsus of fourteenth legs biarticulate.

Prefemur of anal legs armed ventrally; femur, also armed ventrally or mesally with spinules; tibia unarmed. Tarsus many jointed as in Newportia; clawless.

Genotype.- T. simus, sp. nov.
This interesting genus is manifestly very close to Newportia, to which its relationship is suggestive of that of Paracryptops to Cryptops. The agreement of Tidops with Newportia will be particularly noted in the possession of a many jointed tarsus on the anal legs, this feature separating these two genera from all other Cryptopidae. Tidops is at once to be distinguished from Newportia by its dwarfed prehensorial claws, the strongly developed prosternal dental processes, the thirteen-jointed antennae; and the characters of the ventral plates. Only the type species is known.

## Tidops simus, sp. nov.

General color ochraceous. Head and prosternum dark reddish brown or ferruginous. Legs yellow.

Head with median sulci showing as two short parallel lines across caudal border. Head differing slightly in width anteriorly and posteriorly; anterior margin widely semicircular; caudal margin subtruncate or but slightly excurved.

Antennae flattened, composed of thirteen articles of which the first two, three, or four are very sparsely hirsute, the others becoming gradually more and more densely and finely clothed with short straight hairs of the type usual in the family.

Claws of prehensors dwarfed. None of the articles of prehensors armed within.

Prosternum with two deep and continuous submedian longitudinal sulci. Anterior margin bearing two large, cylindrical, distally rounded teeth or dentiform processes.

Transverse sulcus of first dorsal plate strongly bent back in an angle at middle, the vertex lying in a rather deep depression or pit; sulcus wholly free from the cephalic plate. Longitudinal sulci subparallel or a little converging cephalad from the caudal margin to about two thirds the distance to the transverse sulcus where each bifurcates, sending its mesal branch to meet its mate at the angle of the transverse sulcus and its outer branch ectocephalad to meet the transverse sulcus farther laterad. Dorsal plates from the second one caudad longitudinally bisulcate. Lateral furrows distinct from the fifth plate caudad. Median keel low and flat, set off by furrows on the posterior plates, but becoming first indistinct and finally disappearing cephalad. Last dorsal plate with margin bowed out caudad as usual; the margin mesally truncate. With a median longitudinal sulcus.

Ventral plates long, longest cephalad, a little incurved near middle; more strongly narrowed caudad, the tongue-like, distally rounded caudal end lying well beneath the anterior portion of the succeeding plate. Widely but distinctly depressed transversely across middle of plate, but with no evident longitudinal furrows or sulci. Last ventral plate narrowed caudad. Caudal margin mesally indented or emarginate, the emargination very obtusely angular with the margin each side convex and the corners rounded. A pair of bristles on caudal portion.

Process of coxopleura rather short, acutely one-pointed. No spines proximad of tip of process or on caudal margin of coxopleura, but a stout bristle at base of each process. Pores of small size, numerous; the pore area not fully attaining the caudal margin, and removed from lateral margin caudally by a wide space but only by a narrow space anteriorly.

Spiracles obliquely and mostly narrowly elliptic.
Anterior tarsi undivided. Tibia with one distal spine, none being present on ventral side.

Antepenult legs with tarsus undivided; prefemur with two ventral spines and femur with one. The immediately preceding pairs of legs have one spine on femur and prefemur, these becoming bristle like cephalad.

Penult legs with prefemur bearing along ventral line two slender spines. Femur also bearing two ventral spines in a line, one of these being at distal end; in addition there are on mesal side toward distal end two additional similar spines. The biarticulate tarsus bearing a few long bristles rentrally, mesally, and dorsally, but ectally with numerous shorter and much finer hairs; the more proximal articles with but few bristles.

Tibia of anal legs unarmed; very much thicker than the tarsus, somewhat clavately widening distad and at ventroectal corner of distal end bearing a conspicuous cylindric process; sparsely clothed with bristles. First tarsal joint strongly clavately widening from base distad and compressed laterally; extended on ventromesal side at distal end into a conspicuous conical process; clothed with few long stiff bristles; clearly less than half as long as the tibia. Second division of tarsus abruptly much thinner than the first article is distally, its proximal article about half as long as the first division; articles of distal division, six to eight, clothed sparsely with long bristles like those of the preceding articles. Femur armed along ventromesal line with two small spines, one toward proximal end and one at or a little proximad of the middle; otherwise unarmed; clothed sparsely with bristles. Prefemur with a ventral row of three stout spines which are clearly shorter than the diameter of the article and are distally bent; along median line of mesal surface near middle of length with two spinules and along dorsomesal line with a series of five or six longer acute spinules; immediately ectad of ventral spines two short spinules and below middle of ectal surface about six longer spinules like those of the dorsomesal line; elsewhere bearing only hairs, which are sparse.

Length near 19 mm .
Locality.-Grenada: Richmond Hill (C. T. Brues and G. M. Allen). Type, M. C. Z. 1746; one specimen.

## Newportia cubana, sp. nov.

Dorsum olivaceous, excepting the first plate and the last two plates; a darker green to greenish black median longitudinal geminate band; lateral margins also darkened and caudal shorter mottled with dark green. Head with first and last two dorsal plates bright chestnut.

Antennae chestnut like the head, paler, yellowish, distad. Prosternum and prehensors and last ventral plate bright chestnut. Rest of venter light olivaceous, most plates showing a pair of circular dark spots on anterior border and an elongate one on anterior portion of episterna, each consisting of many fine dots. The pleural region also mottled with similar dark spots and streaks. Legs yellowish or ochraceous; the last pair darker, more or less chestnut; penult legs with prefemur, femur, and tibia ventrally whitish, the whitish area embracing an irregular mottling of fine dark dots.

Head densely finely punctate. Paired sulci represented merely by very short weak traces on the caudal border. Caudal margin widely convex.

Antennae short; consisting of the usual seventeen articles. Most articles densely clothed with the usual fine and very short hairs but these on proximal few articles becoming less and less dense and interspersed with longer, coarser hairs.

Prosternum with dental plates very wide but very short, their anterior margins forming a straight or nearly straight transverse line.

First dorsal plate with the cervical sulcus strictly semicircular and entirely free from the head. Paired sulci diverging cephalad and terminating at the cervical sulcus. Sulci of the second plate converging cephalad; those of the succeeding ones parallel. Most plates clearly longitudinally furrowed or depressed each side of the middle line and setting off a low keel-like elevation. Last dorsal plate mesally rather abruptly broadly produced caudad, the produced portion truncate; not sulcate.

Ventral plates, excepting the first and the last three, with a distinct median longitudinal sulcus which does not cross either the anterior or the posterior border. Last ventral plate with sides only very slightly convex, strongly converging caudad; caudal margin widely, subangularly incurved.

Coxopleural process long and slenderly conical, ending in a single spine; otherwise the process and coxopleura wholly unarmed.

Tarsi of all legs biarticulate. No tarsal spine present.
Tibia of anterior legs with a ventral spine at distal end but with no lateral one. No spinules on proximal joints of anterior legs.

Penult legs without spinules.
Anal legs with prefemur bearing ventrally a series of four long, distally curved spines which are shorter than the diameter of the joint; otherwise unarmed. Femur armed ventrally toward mesal side at proximal end with one shorter spine (and in one specimen on one leg with a second spine toward middle of length); otherwise unarmed. Tibia of uniform diameter throughout; more slender than, but equal in length to the femur; unarmed. First article of the tarsus more slender than the tibia though not greatly so; and a little more than
half its length. Distal division of tarsus long, composed of from fifteen short to but seven longer distinct articles. ${ }^{1}$

Length $35-42 \mathrm{~mm}$.
Locality.- Cuba: Juan Guerra Sagira de Panamo; Guantanamo, Arroyo Hondo. (C. T. Ramsden). Type, M. C. Z. 1753; two specimens, Type and M. C. Z. 1754.

## Newportia oreina, sp. nov.

General color clear yellow to light brown. Head and prosternum light brown or testaceous. Legs mostly clear yellow, the caudal pairs darker, more orange. Antennae brownish yellow.

Body very slender; narrowed from near the caudal end cephalad to the second dorsal plate.

Head smooth and shining, not distinctly punctate. A short, chitinized median sulcus extending from the anterior margin. A pair of parallel sulci, one a little each side of median line, extending from caudal border only a short distance cephalad; no transverse sulcus. Median portion of caudal margin straight, the margin bending forward at sides about the well-rounded caudal corners.

Antennae short; articles seventeen. Articles distad of the fifth, densely clothed with very short fine, straight hairs, the hairs on the more proximal articles longer and more sparse but none of the articles glabrous.

Anterior margin of the prosternum with a slight acute emargination at middle. A very short, narrow chitinous plate each side of the indentation, the edge of which is straight and slants a little caudad of ectad. Two well-separated longitudinal sulci which extend cephalad to a little distance caudad of the anterior margin where they are united by a weaker transverse impression.

First dorsal plate with the cervical sulcus angular at middle, the vertex lying in a moderate depression; lateral portions of sulcus covered by the cephalic plate. The longitudinal sulci distinct, converging cephalad and bifurcating to form a w-shaped mark the ends of which terminate on the transverse sulcus in the usual way; commonly a fainter transverse sulcus connecting the caudal angles of the w-mark and extending, slightly ectad on each side. Longitudinal sulci of second dorsal plate gently converging cephalad and near

[^0]anterior border meeting a semicircular transverse sulcus the convexity of which is caudad. Sulci on the remaining plates parallel or very nearly so. On the third plate an oblique sulcus runs from the anterior end of each longitudinal sulcus obliquely ectocaudad. Some tergites of the posterior median region may show two longitudinal sulci close together and embracing between them a slight median ridge, but no true keel is present on any of the plates. The last dorsal plate with the caudal margin arcuate, the median portion protruding convexly with each lateral end becoming transverse or nearly so.

Ventral plates smooth and unfurrowed excepting for a transverse subsemicircular impression or furrow toward anterior end of each plate, this furrow usually more distinct in caudal region. Last rentral plate nearly equal in length and breadth. Sides convex, strongly converging caudad. Caudal margin mesally angularly emarginate.

Coxopleural processes moderately long, straight; the distal spine slender and acute. Process armed on ventral surface mostly with two spinules, but sometimes with only one. Caudal border of coxopleura also bearing usually two spinules.

Spiracles typically circular; the first very much larger than the succeeding ones, sometimes appearing more or less elongate.

Tarsi of all legs biarticulate. Second tarsal joint of anterior legs bearing a slender ventral spine near middle. Tibia with a small ventral but no lateral spine at distal end. Femora of all legs with ventral spinule at distal end. Prefemora with mostly two or three ventral spinules.

Penult legs with femur and prefemur bearing a considerable number of spinules chiefly on dorsal and mesal (caudal) surfaces.

Prefemur of anal legs bearing on ventral surface a longitudinal series of four long spines of which the most distal is farther ectad than the others and is at the very distal end of the article; these spines distinctly shorter than the diameter of the article. Femur with a similar ventral series of three spines nearly of same size as those of the prefemur; of these the most proximal is farther ectad than the others and the most distal one is about one fourth the length of the article from its distal end. Femur and prefemur in addition bearing numerous spinules on ectal and dorsal surfaces. Other joints unarmed. Tibia longer than the femur and longer than the first tarsal joint in about ratio $13: 10$. First tarsal joint much more slender than the tibia; somewhat angularly extended ventrad at distal end. Succeeding portion of tarsus abruptly very much more slender, proportionately short, commonly not much differing in length from the femur; composed of from five to eight distinct articles. Bristles sparse, moderate in length.

Length up to $22-23 \mathrm{~mm}$.

Locality.- Mexico: Hidalgo, Guerrero Mill (W. M. Mann). type, M. C. Z. 1758; ten specimens, several of which are immature, Type and M. C. Z. 1719.

This species is closest to N. spinipes Pocock. It differs clearly in having all tarsi biarticulate; in having the anterior legs with but one tarsal spine additional to the ordinary dorsal one; in the number and disposition of spinules on the anterior legs; in the form and proportions of the first tarsal joint, and in the number of segments of the distal division of the anal legs (only 5-8 as against 13-14 in spinipes); in the very much smaller size.

## Cryptops manni, sp. nov.

Body yellow, with the head and caudal end a little darker.
Head subcordate; strongly narrowed cephalad from the middle; caudal margin between rounded corners straight. Clearly longer than wide (ratio about $39: 35$ ). Smooth. No sulci evident.

Prosternum with paired submedian longitudinal sulci which are not sharply defined. Not punctate. Anterior margin nearly straight except at ends where rounded caudad, also slightly indented at middle; on each side of middle bearing a pair of bristles directed cephalad and on each lateral curved portion another pair directed ectocephalad.

First dorsal plate with anterior border overlapped by the cephalic plate. A distinct transverse semicircular sulcus close to the margin of head, the sulcus not at all angulate at middle. Longitudinal sulci faint. Plates from the second caudad longitudinally bisulcate, the caudal ones especially showing in addition a curved sulcus on each side which is deepest on the cephalic part of plate. Plates not roughened or bearing cornicles. Hairs sparse. Last tergite with caudal margin mesally strongly convexly protruding; with a median longitudinal sulcus which is not distinct anteriorly; no pit-like depression caudad.

Last ventral plate with sides nearly straight, converging caudad. Caudal margin a little incurved or indented mesally.

Coxopleurae not at all produced caudally. Pores few.
First pairs of legs with tarsi entire but a division appearing and becoming more and more clearly detectable in proceeding caudad.

Prefemur of anal legs bearing numerous moderately stout spines ventro-laterally with longer bristles intermixed, a longitudinal ventral area free from spines but bearing bristles; dorsally at the distal end the joint is longitudinally furrowed and bears on the mesal side a stout short spine. Femur ventrally also with numerous long spines;
dorsally at distal end with two stouter short spines or teeth of which the ectal one is the larger. Tibia also somewhat flattened at distal end above and bearing two similar stout spines of which the ectal one is a little the larger; ventrally with a longitudinal series of five stout teeth. First tarsal joint bearing a ventral series of three, five stout teeth, followed by a small rounded process or lobe at distal end toward mesal side.

Length of type about 9.5 mm .
Locality. - Haiti: Milot, January, 1913 (W. M. Mann). Type, M. C. Z. 1714; one specimen.

## SCOLOPENDRIDAE.

Scolopendra polymorpha pueblae, var. nov.
Differs from typical S. polymorpha most clearly in having the distal process of the prefemur of the anal legs bearing uniformly only two stout spines (or in one specimen three on one side only). Spines of coxopleural processes three to five, of which one or two are stouter than the others, and one lateral one on the caudal edge of the cosopleura. Median sulcus of last dorsal plate fine, distinct. Dorsal plates sulcate from the tenth on. Tarsus of twentieth legs armed. Olive-brown with caudal borders of plates deeper green.

Length from 130 to 135 mm ., much exceeding the average of the forma typica and the larger one exceeding the maximum length recorded for the species.

Locality.- Mexico: Puebla (Mrs. L. C. Langton). Type, M. C. Z.1705; two specimens, Type and M. C. Z. 1748.

## GEOPHILOMORPHA.

## ORYIDAE.

TITANOPHILUS, gen. nov.
Head relatively small. No frontal suture present.
Antennae flattened, short, conspicuously pointed.
Labrum entire; widely concave; densely fringed with spinescent teeth.

Mandible with several pectinate lamellae.
First maxillae with lappets present, these more or less dorsal in position. Palpus biarticulate, the second article long. Inner branch set off by a suture. Coxae fused at middle. Claw of palpus of second maxillae simple, concave. Coxae fused at middle, the median portion bulging ventrad and broadly triangularly extended caudad. Salivary pore opening toward proximal end of coxal plate, the pore breaking through the mesal border.

Prehensors not large but considerably exposed from above. Claws, when closed, not surpassing front margin of head.

Prosternum with chitinous lines absent or vague. Anteriorly widely emarginate; unarmed. Basal plate very wide; short.

Dorsal plates with distinct paired submedian sulci.
Prescutellum large, distinctly separated from the spiraculiferous plate. In the anterior segments these sclerites touch the tergite, there being no suprascutella. Farther caudad first one and then more indistinctly two series of suprascutella appear between the two sclerites mentioned and the tergites.

Ventral pores occurring over most of plate excepting a median transverse area.

Last ventral plate wide.
Coxopleurae without pores.
Anal legs each consisting of five articles distad of the coxopleura; clawless.

Genotype.- T. maximus, sp. nov.
Closely related to Notiphilides with which it agrees in having the anal legs only five jointed. From this genus it is most readily distinguishable through the presence of the paired submedian sulci and the absence of all suprascutella from a considerable number of the most anterior segments.

## Titanophilus maximus, sp. nov.

Dorsum anteriorly yellow of dilute ochraceous cast; in median region darker, testaceous, of dull olivaceous tinge; again lighter, yellowish, at caudal end. Head light testaceous. Antennae and legs yellow. Prosternum and prehensors like head. Venter anteriorly and caudally clear yellow, the median region testaceous of dull weak olivaceous cast.

Head with anterior margin wide, subtruncate or mesally widely angulate; caudal margin widely convex or somewhat arcuate; head depressed along caudal border each side of middle. Plate of nearly same width anteriorly as posteriorly, sides convexly bulging between. A short median longitudinal sulcus evident on caudal portion and a
similar one on the anterior portion; 1.37+ times wider than long in type.

Basal plate very short, as wide as or slightly wider than the cephalic plate at its widest level; sides converging cephalad. Nine times as wide as median length.

Antennae moderate in length. First article broadest, the antenna being somewhat constricted at third article and then again widening to the fifth or sixth from where it narrows gradually to the distal end. Ultimate article shorter than the two preceding ones taken together (ratio 10:12 or 13).

Claws of prehensors when closed reaching anterior margin of head; slender. Other joints of prehensors very short.

Prosternum with a distinct median longitudinal sulcus over the caudal half of length; 2.4 times wider than the greatest length of the exposed portion. Margin between prehensors widely concave, smooth. Two, or a little more, times longer than the greatest length of femuroid.

First dorsal plate 1.5 times longer than the basal plate and considerably wider, its ends strongly depressed. Second plate longer but much narrower than the first. Dorsal plates of most of the body with two very sharply impressed longitudinal sulci close to middle of plate and a less sharply impressed median one between them, these sulci being faint or obscure on the most anterior plates and also faint on the last few. Plates otherwise unmarked; obscurely finely roughened.

Anal tergite broad, its caudal half strictly semicircular; 1.5 times wider than long.

Prescuta very short or quite concealed.
Most ventral plates a little concavely depressed from edges toward middle; some showing a vague longitudinal median sulcus. Under a lens the surface is seen to be very finely, somewhat obscurely, shagreened or tubercular. Last ventral plate short and very broad. Anterior and caudal margins straight; lateral margins straight, converging caudad; three times wider than long.

Anal legs in the male short, but longer than the penult and much stouter, being strongly crassate. Last four articles of about equal thickness and the ultimate and penult nearly of the same length. Hairs very short, rather sparse. Coxopleurae small, poreless.

Gonopods of male biarticulate, as a whole conical, the proximal article being very broad.

Pairs of legs 169 ( $\sigma^{7}$ ).
Length between 190 and 200 mm . Greatest width of body 4 mm . Width of widest tergite, 3 mm .

Locality.- Haiti: Grand Riviere (IV. M. Mann). Type, M. C. Z. 1732, one male.

## Titanophilus fratrellus, sp. nov.

Dorsum anteriorly and at very caudal end of body ochraceous; in the middle of a distinctly olivaceous cast. The color of venter nearly the same as that of the dorsum. Head and prosternum with prehensors pale brown of a dilute olivaceous cast. Antennae and legs yellow.

Body robust; narrowed at very caudal end and less obviously in anterior region.

Head subcordate; widest caudally and conspicuously narrowed cephalad, as a whole somewhat convex, the caudal border apparently sharply depressed, the elevated edge arcuate. Only a little wider than long ( $37: 34$ ). A short, deep median longitudinal sulcus on middle portion of plate. Cephalic plate not wholly covering prehensors from above.

Basal plate very wide and very short; wider than the head; 6.5 times wider than its median length.

Antennae flattened as usual; very short; broad at base and uniformly narrowing distad. Ultimate article short, pointed, a very little shorter than the two preceding articles taken together.

Claws of prehensors slender; when closed not attaining front margin of head.

Exposed portion of prosternum a little more than twice wider than the greatest length; five times longer than the greatest length of femuroid. Margin between prehensors wide, weakly concave; a vague, dark nodular elevation each side of middle.

First dorsal plate wider than the basal plate and also than the second tergite. Not quite twice as long as the basal plate (ratio 11:6); shorter than the second in ratio $11: 13$; sides much converging caudad. Dorsal plates strongly bisulcate, with a much weaker or often obsolete median sulcus between the paired sulci; sulci becoming weaker or obscure on most anterior and most posterior plates. Anal tergite caudally semicircularly rounded or mesally somewhat obtusely angular; equal in length and breadth.

Prescuta in caudal region short but distinct, becoming very short cephalad. Prescutum of last pediferous segment longest at-middle, running out to a point on each side, its caudal margin appearing convex and its anterior one straight.

Ventral plates not specially marked. Last ventral plate broad but relatively much longer than in T. maximus, being only twice as wide as long; sides straight, strongly converging; caudal margin weakly incurved from end to end.

Ventral pores small, not very dense, occurring over all of sternite excepting the usual median area.

Spiracles narrowly oblong, placed a little obliquely to the longi-
tudinal line. Anterior ones large and conspicuous, decreasing moderately caudad.

Anal legs in male very strongly crassate; flattened dorsoventrally; femur thickest. Trochanter not quite half as long as prefemur which is longer than the femur. Greatly exceeding the penult legs in length. Densely clothed with very fine short hairs.

Number of pairs of legs $149\left(\sigma^{7}\right)$.
Length about 115 mm . Greatest width 2.6 mm . Width of widest dorsal plate 2 mm .

Locality.- Haiti: Petionville, November, 1912 (W. M. Mann): Type, M. C. Z. 1718; one specimen.

## SOGONIDAE.

Key to Genera of Sogonidae.
A. Anal leg composed of but five articles distad of coxopleura.

Timpina Chamberlin.
aA. Anal leg composed of six articles distad of the coxopleura.
B. Anal leg clawless; first maxillae with long lappets.

Sogona Chamberlin.
BB. Anal leg ending in a well-developed claw; first maxillae without lappets Garrina, gen. nov.

Garrina, gen. nov.
Head small; with no distinct frontal suture. (Prebasal plate exposed). Basal plate wide.

Antennae with proximal articles more or less flattened, attenuated and filiform distad.

Labrum mesally convex and laterally concave as usual.
First maxillae with palpus or outer process biarticulate; without lappets. Inner branch showing trace of a suture mesally but across most of branch to ectal side with no indication of separation. Coxae fused at middle. Coxae of second maxillae weakly narrowly united at middle. A deep narrow incision extending between them from anterior margin. Palpus of good size, triarticulate as usual, terminating in a well-developed, simple claw.

Prehensors small, wholly unarmed. Largely covered in dorsal view. Claws when closed not extending beyond front margin of head.

Prosternum with chitinous lines strongly developed.

Ventral pores small and few, arranged as usual in a narrow transverse band a little behind the middle of the sternite.

Last ventral plate wide.
Coxopleural glands opening into two large pits on each side.
Anal legs each consisting of six joints distad of the coxopleura; terminating in a well-developed claw.

Genotype.- G. ochrus, sp. nov.
This genus is at once distinguishable from Timpina and Sogona, the other genera of the family, in having the anal leg armed with a distinct claw, and in lacking lappets on the first maxillae.

## Garrina ochrus, sp. nov.

Bright yellow, the color a little duller and somewhat dusky over middle. Head similar but color duller, darker caudad of suture antennae yellow of very faint brownish tinge. Prosternum yellow of dilute chestnut cast. Venter and legs clear yellow.

Body moderate, of nearly uniform width over much of length, but at very anterior portion strongly narrowed to the small head and over the caudal third of length gradually and considerably narrowing.

Head with no frontal suture; anterior border subtriangular; widest back of middle. Caudal margin wide; weakly excurved at middle and incurved toward each end. Equal in length and breadth. Basal plate with front margin concave, overlapped at sides by cephalic plate but mesally leaving prebasal plate exposed. Very wide, wider across base than the head ( $41: 37$ ).

Antennae approximate at base; first several articles broad and flattened, the antennae narrowing rapidly and becoming filiform distally. Short; slightly more than 2.5 times length of cephalic plate. Ultimate article nearly equalling the two preceding ones taken together.

Claws of prehensors moderately stout; when closed attaining front margin of head. Prehensors wholly unarmed.

Margin of prosternum between prehensors rather short; straight excepting for a weak median emargination. Sides straight and only slightly converging from anterior end back to the convex caudal portion. Wider than long in ratio 47:35; about $3.33+$ times longer than greatest length of femuroid. Chitinous lines strongly developed, complete.

First dorsal plate anteriorly a little wider than the basal plate and much wider than the second tergite; sides convex, converging to the very strongly oblique caudal corners, the line of truncation. of the corners being much more nearly horizontal than longitudinal. Dorsal
plates bisulcate; on anterior tergites also a clearly impressed median longitudinal sulcus.

Prescuta mostly very short over entire length, a longer one occurring occasionally at irregular intervals.

Ventral plates with a median longitudinal sulcus extending from anterior margin to caudad of middle where it commonly ends in a weaker transverse furrow.

Last ventral plate broad; sides straight and strongly converging; caudal margin moderately angularly bent in from ends to middle.

Ventral pores small and rather sparse; arranged in a very narrow transverse band between middle and caudal margin.

Coxopleurae each with two large pits of which the inner portion is covered by the last ventral plate.

First spiracle subvertically oborate, the second and third less elongate and the fourth and succeeding ones circular. First spiracle clearly the largest, the others very gradually decreasing in size caudad, the anterior ones being large and the most caudal ones small or minute.

Anal legs very much longer than the penult. In the male crassate; the femur thickest with the tibia and first tarsal joint a little thinner and the second tarsal joint abruptly much thinner (Plate 3, fig. 3). Armed with a distinct slender claw. Hairs mostly short, sparse.

Pairs of legs 59-63.
Length up to 26 mm .
Localities.- Mexico: Hidalgo, Guerrero Mill (IV. M. Mann). Type, M. C. Z. 1723. Mexico: Pachuca (W. M. Mann); Distrito Federal, Esclava (O. W. Barrett); four specimens. Type and M. C. Z. 1721, 1722, 1724.

## LINOTAENIIDAE.

PAGOTAENIA, gen. nov.

Head small; a true frontal suture not present. Basal plate wide. Prebasal plate not exposed. Dorsal plates not bisulcate.

Antennae filiform.
Labrum free; tripartite. Median piece very large, overlapping the small lateral pieces; conspicuously arcuate with the free caudal border fringed with close set spines across entire width much as in Azathothus.

First maxillae with coxae completely fused; coxal plate at each
ectal end extended cephalad into a conspicuous process which resembles a large proximal joint to the palpus which it bears, giving the latter the appearance of being triarticulate. Palpus distinctly biarticulate, the second article large, bending about distal end of inner process; no lappets present. Inner process set off by a distinct suture. Second maxillae with coxae completely coalesced. Palpus not long; ending in a large simple claw.

Prehensors small; largely concealed by head in dorsal view; wholly unarmed. Claw slender but not constricted or excavated proximally; when closed extending a little distance bevond front margin of head.

Prosternum with chitinous lines strongly developed but incomplete cephalad.

Ventral pores in a transverse band in front of caudal margin, the band commonly divided at middle.

Last ventral plate wide.
Coxopleurae each with pores opening as two pits of moderate size at edge of sternite.

Anal pores not manifest.
Anal legs composed of six articles distad of coxopleurae; clawless.

## Genotype.- P. lestes, sp. nov.

Apparently most closely related to Agathothus, from which it differs in having the inner branch of the first maxillae separated off by a suture, the outer branch elevated on a distinct process of cosa, the prosternum provided with chitinous lines, coxopleural pores in form of two pits on each side, and the anal legs clawless.

## Pagotaenia lestes, sp. nov.

Dorsum light greenish brown; darker, clearer brown cephalad; lightest caudad. Head, antennae, prosternum, and prehensors dilute chestnut. Venter of greenish brown cast. Legs pale brownish.

Body of typical Linotaenia form being strongly narrowed from middle region both caudad and cephalad; entire body clothed with numerous straight short hairs.

Head small with true frontal suture not present, but a pale line in its place more or less traceable. Wider than long in ratio 12:11. Anterior or frontal portion semicircularly rounded, or the anterior margin mesally somewhat angulate. Sides convex. Head widest between frontal region and caudal end. Caudal border a very little overlapped by the basal plate. A median longitudinal sulcus evident on posterior portion. Hairs short, numerous. Basal plate wide;
as wide as head; nearly as wide across anterior as across posterior border; 2.6 times wider than long.

Antennae very short, filiform; only about 2.25 times longer than the head. Articles short; the ultimate a little shorter than the two preceding ones taken together. Hairs very short and rather dense; increasing in length on proximal articles.

Claws of prehensors very slender, narrow at base; unarmed; when closed surpassing the anterior margin of head and attaining the distal end of the first antennal article. None of the articles armed.

Margin of prosternum between the prehensors wide; forming a gently reëntrant angle. Sides convex; strongly converging caudad. Wider than long in ratio $7: 4 ; 1.7$ times longer than greatest length of the femuroid. Chitinous lines distinct but incomplete at anterior end.

First dorsal plate a little wider than the basal plate; sides convex, converging caudad. Plates not sulcate.

Anterior ventral plates each with caudal border transversely conspicuously depressed or channelled and at middle with an angular process fitting into a corresponding process in the anterior border of the succeeding sternite.

Last ventral plate very broad; wider than the preceding one. Sides strongly converging caudad; caudal margin wide, weakly convex. Wider than long in about ratio 5:3.

Ventral pores numerous; arranged in a transverse band each side of the middle line and immediately in front of the caudal margin, the band on each side widest at ectal end.

Coxopleurae not large. Pores on each appearing as two pits near or partly beneath edge of sternite.

Spiracles all circular and small, scarcely differing in anterior and posterior regions; the first one not at all enlarged.

Anal legs distad of coxopleurae a little shorter than the penult pair. In the male strongly crassate; thickest at femur; ultimate article short, conically rounded distad. Clawless. Densely finely pubescent.

Legs of first pair a little shorter and more slender than those succeeding. Anterior pairs a little more robust than the posterior ones.

Pairs of legs 43 ( $\sigma^{7}$ ).
Length 24 mm .
Locality.- Mexico: Hidalgo; Guerrero Mill (W. M. Mann). Type, M. C. Z. 1715; one specimen.

## CHILENOPHILIDAE.

NESIDIPHILUS, gen. nov.
Head with frontal plate usually not set off by distinct suture but this sometimes present or indicated by a pale line. Basal plate wide; trapeziform; overlapped by the cephalic plate. Dorsal plates bisulcate.

Antennae filiform, short.
Labrum free; tripartite. The median piece large; bearing along the caudal margin a series of long stout teeth of which the median ones are largest. Lateral pieces fringed with paler, distally more slender, spinescent processes.

Second maxillae with coxae completely united at middle, the isthmus moderately wide cephalocaudally and as well chitinized as the more lateral portions. Pleurosternal sutures strongly developed. The sclerite ordinarily appearing at caudal angles of inconspicuous size is in this genus large and extended cephalomesad parallel with suture, being separated caudally by a narrow slit but elsewhere united with portion of plate adjoining the suture. From between the anterior ends of these inner sclerites extends cephalad a median tongue-like chitinous process (Plate 5, fig. 3). Palpus triarticulate, terminating in a simple claw of moderate size. None of articles with a process. First maxillae with two long membranous lappets on each side. Inner division set off by a distinct suture. Coxae completely fused.

Prehensors large; conspicuously exposed from above and extending much beyond front margin of head. Claw commonly serrulate proximally within; always armed at base with a stout black conical tooth. Femuroid armed within near distal end with a larger distally rounded process which is paler and less strongly chitinized than the tooth of claw, of about same color as rest of article. Other articles unarmed.

No chitinous lines on prosternum.
Ventral pores numerous; arranged in four areas, one on each quarter of plate toward anterior or caudal margin as case may be.

Spiracles circular excepting the first one which is vertically more or less elongate and of large size.

Last ventral plate narrow; its sides strongly converging caudad.
Tergite of last pediferous segment broad, being anteriorly as wide as the preceding tergite; sides convex; largely concealing the coxopleurae from above (Plate 5, fig. 3).

Coxopleurae moderately inflated but not unusually elongate and not at all exposed at sides of last prescutum. Pores small and very numerous; most abundant dorsally and ventrally along and beneath edges of dorsal and ventral plate, fewer laterally and caudal end.

Anal leg with six joints distad of the coxopleurae. Unarmed or with obscure trace of claw. Not long.

Genotype.- M. latus, sp. nov.
This genus corresponds in part to Polycricus as used by Cook but does not embrace the type of that genus ( $P$. toltecus) as given by its authors, Humbert and Saussure. In addition to the genotype, Nesidiphilus includes N. montis, sp. nov., N. nicaraguae, sp. nov. and $N$. marginalis (Meinert), Polycricus floridanus Cook being a synonym of the last mentioned species.

## Nesidiphilus lates, sp. nov.

Dorsum rather dark brown with anteriorly a black median stripe which posteriorly becomes geminate and may be there indistinct; margins of plates and pleural sclerites may be mottled with purplish much as in marginalis. Head typically of a chestnut cast. Antennae brown, somewhat paler at tips. Prosternum and prehensors like head. Venter a lighter brown than the dorsum. Legs testaceous.

Body broad, robust; strongly narrowed from the middle caudad but only moderately narrowing cephalad to the head.

Head with place of suture taken by a pale line from the level of which cephalad the head is somewhat constricted. Anterior margin convex, the part between bases of antennae straight or a little concave. Head distinctly narrowing from near frontal region caudad to caudal region where the sides convexly round in and converge to the straight caudal margin. Nearly two thirds as wide as long (ratio in type 60:97). Basal plate 3.45 times wider than long; coarsely punctate.

Antennae short being only about 2.33 times longer than the head. Ultimate article scarcely narrowed distad, apically well rounded; three fourths as long as the two preceding ones taken together.

Claws of prehensors when closed reaching to between proximal and distal ends of second article of antennae. Claws stout, proximally serrulate or finely crenulate on mesal side; armed at base with a stout conical black tooth and distad of this showing a dark low eminence. Femuroid distally with a stout well-rounded nodular process which is pale. Other articles unarmed.

Sinus of prosternum semicircular, shallow; a low dark nodular eminence or tooth on each side of it. Sides a little converging caudad, at middle of length very slightly incurved. Free portion nearly 1.2 times longer than greatest length; 1.7 times longer than greatest length of femuroid. Subdensely punctate.

Dorsal plates deeply bisulcate; the anterior ones showing also a
deep median longitudinal sulcus extending caudad to a sharply impressed transverse sulcus extending across the plate caudad of the middle; farther caudad this median sulcus tends to be replaced by a pair of sulci.

Last ventral plate narrow but as wide across anterior end as its length. Sides straight, strongly converging caudad. Width across anterior end nearly twice as great as that across the caudal. Anterior margin convex, the caudal weakly incurved. A median longitudinal sulcus more or less evident.

Posterior prescuta short, the anterior ones very short.
Ventral plates with a median longitudinal furrow which is very deep at middle but on some anterior plates may not attain the margins; crossed near its middle by a weak transverse furrow.

Anal tergite broad. Wider than long in ratio 8:7. Sides only weakly convex, more abruptly bending in caudad. Caudal margin nearly straight.

Ventral pores in an area on each anterior quarter of sternite and in a transverse band across caudal border this band being more or less divided at median line by a poreless area.

Coxopleurae moderate. Pores small and numerous; most dense dorsally and ventrally along tergite and sternite, fewer laterally and absent from most caudal portion.

First spiracle much the largest, subcircular or vertically a little elongate; all others strictly circular; the second intermediate in size, the others decreasing caudad and in the caudal region becoming small or very small.

Anal legs exceeding the penult in length though not greatly so. In the female slender, the distal articles more slender than the proximal. Second tarsal article with a minute vague rudiment of claw. Anal legs in male more crassate than in female though not strongly so.

First legs shorter and much more slender than the second which are as large as those immediately succeeding. Posterior pairs longer than the anterior ones.

Pairs of legs 7 ( $\mathrm{o}^{7}$ ) -49 ( O ).
Length $24-40 \mathrm{~mm}$. but mostly $30-40 \mathrm{~mm}$.
Locality.-Jamaica: Blue Mountain Peak. Type, M. C. Z. 1725 ; six specimens, Type and Paratypes, M. C. Z. 1749.

Nesidiphilus montis, sp. nov.
Dusky brown. Head with prosternum and prehensors clearer brown of faint reddish cast. Antennae light brown. Legs brownish yellow. Body narrowing conspicuously caudad.

Head and anterior portion of body broad. Head anteriorly semicircularly rounded. Widest near caudal end of frontal region from where the sides are straight and converge very slightly caudad to the oblique caudal corners. Caudal margin straight. Frontal suture not present; 1.45 times longer than wide. Basal plate 3.4 times wider than long.

Antennae very short, pointed; only about 2.2 times longer than the head. The ultimate article moderately short, distally rounded, only three fourths as long as the two preceding articles taken together.

Claws of prehensors when closed reaching or nearly reaching the distal end of the second antennal article. Claw at base with a stout, conical, black tooth. Intermediate articles unarmed. Femuroid near distal end with a stout rounded pale process of the usual type.

Anterior margin of prosternum with a median sinus which is shallow and semicircular; on each side of sinus an obscure low nodule or tooth. Sides nearly straight back to the rounded caudal corners; a little converging caudad. Exposed part of prosternum 1.24 times wider than median length; 1.64 times as long as the greatest length of femuroid. Densely and rather coarsely punctate.

Dorsal plates deeply bisulcate, with a mostly equally well-impressed median longitudinal sulcus; a sharply impressed transverse sulcus across plate a little caudad of its middle.

Last dorsal plate broader, largely concealing the coxopleurae in dorsal view; shield shaped with the caudal end truncate and the anterior margin also straight. Wider than long in ratio 5:4.

All prescuta short, those of anterior region extremely so.
Ventral plates with a deep median longitudinal sulcus which is deepest at middle of its length; this crossed behind middle by a weaker transverse sulcus.

Last ventral plate narrow and long; its sides straight, strongly converging caudad; anterior margin convex; caudal margin also, but weakly, convex. Anteriorly the plate is twice as wide as across caudal end or nearly so; about three fourths as wide as long.

Ventral pores numerous; chiefly in a transverse caudal band more or less clearly divided at middle line; a smaller area toward each anterior corner.

Coxopleurae moderately inflated; not unusually elongate. Densely porose as usual.

First spiracle much the largest, vertically elongate, subelliptic; others circular, decreasing caudad.

Anal legs much longer than the penult; slender. Last tarsal article long and slender.

Pairs of legs 55.
Length near 26 mm .
Locality.- Cuba: Monte Verde. Type, M. C. Z. 1726; one specimen.

## Nesidiphilus nicaraguae, sp. nov.

Dorsum light brown, becoming lighter, yellowish, caudad. Head and antennae dilute chestnut of weak ferruginous tinge. Prosternum and prehensors like the head. Venter yellow to testaceous. Legs testaceous to clear yellow.

Body moderately robust, conspicuously narrowing caudad from middle but only very gradually and moderately narrowed cephalad.

Cephalic plate about two thirds as wide as long. Sides back of suture nearly straight, slightly converging caudad and rounding in more strongly to a short strongly narrowed caudal portion of head. Frontal suture present. Punctae caudad of suture moderately coarse, not dense. Hairs sparse. Basal plate 3 times wider than long.

Antennae thick and moderately long. Ultimate article clearly shorter than the two preceding ones taken together.

Claws of prehensors when closed extending much beyond front margin of head and reaching to near distal end of second article. Claw armed at base with a stout, distally rounded black tooth. Femuroid with a more robust, distally rounded dark process or tooth projecting cephalomesad, this darker and more strongly chitinized than in the other known species of the genus.

Prosternum wider than long in the ratio 5:4. Anterior margin between prehensors widely concave; a slight pale tooth on each side. Sides of prosternum parallel between anterior end and the convex caudal corners; 1.76 times longer than greater length of femuroid.

Prescuta in anterior region short, becoming of moderate length in median region and then again decreasing in caudal region.

Ventral plates with a distinct transverse sulcus crossed by a median longitudinal one, the impressions deepest at the point of crossing, there being a pit-like depression on this part of anterior plates.

Last ventral plate narrow; its sides only slightly converging caudad, straight; caudal margin straight.

Ventral pores numerous; chiefly in two large areas in front of caudal margin and separated by a poreless area along the sulcus; a smaller porose area on each anterior quarter as usual.

First pair of legs shorter and much more slender than the second, the latter being intermediate in size between the first and the third. Anterior and posterior pairs in general scarcely differing in length or thickness.

Coxopleurae moderately enlarged; surface densely perforated with very numerous small pores.

Spiracles all circular; the first one much larger than the third with the second one intermediate in size; the others gradually decreasing caudad as usual.

Anal legs only slightly exceeding the penult ones in length. Slender. The distal article slender, distally rounded, with no trace of claw. Hairs sparse.

Pairs of legs, 79 .
Length about 54 mm .
Locality.- Nicaragua: Escondido River about 50 miles from Bluefields, September, 1892 (C. W. Richmond). Type, M. C. Z. 1731; one specimen.

## Telocricus, gen. nov.

Head without frontal suture. Basal plate trapeziform, wide, overlapped by the head. Dorsal plates bisulcate.

Antennae filiform, long.
Labrum and first and second maxillae essentially as described for Nesophilus.

Prehensors large, much exposed from above, projecting widely beyond front margin of head. Claw armed at base with a stout conical black tooth. Femuroid armed toward distal end with a similar stout black conical tooth equally as well chitinized as that of the claw.

Prosternum without chitinous lines.
Prescutum also long and narrow, the coxopleurae in dorsal view being much exposed each side of it.

Ventral pores arranged as in Nesidiphilus but usually fewer and less obvious.

Last ventral plate very narrow, typically much longer than wide; sides converging caudad.

Tergite of last pediferous segment unusually narrow, conspicuously narrower than the penult plate, clearly and considerably longer than wide; leaving coxopleurae much exposed from above.

Coxopleurae strongly inflated and unusually elongate in correspondence with the long tergite and prescutum, more or less encroaching cephalad. Pores very small and very numerous, densest dorsally and ventrally near plates.

Anal legs with six large joints distad of coxopleurae and in addition with a minute membranous but clearly defined terminal appendage replacing the claw.

Genotype.- T. cubae, sp. nov.
Very close to Nesidiphilus from which it is most readily distinguished by the long and very narrow last tergite and the narrow prescutum which leave the elongate coxopleurae much exposed in dorsal view (Plate 4, fig. 5) as well as by the narrow elongate sternite. The
greater proportionate length of antennae and anal legs is readily noted in most cases.

Telocricus cubae, sp. nov.
Anteriorly ochraceous, becoming clearer yellow caudad. Head darker, of very dilute chestnut cast. Antennae yellow. Prosternum and prehensors like head.

Body of nearly uniform width from middle forwards to head but conspicuously narrowing caudad.

Cephalic plate with anterior margin subtruncate; caudal margin straight. Head of nearly uniform width from frontal region to rounded caudal corners, the sides being straight. Frontal plate coalesced but line of union indicated by a faint pale line. Head 1.67 times longer than wide (ratio cir. 92:55). Basal plate three times wider than length at middle.

Antennae long, 3.25 times longer than the head. Rather thick. Articles long; the ultimate only about two thirds as long as the two preceding ones taken together.

Claws of prehensors when closed reaching to distal end of second antennal article. Claw armed at base with a stout black tooth. Intermediate articles unarmed. Femuroid with- a stout, distally truncate black tooth toward distal end, the tooth larger than that of the claw; femuroid somewhat protruding midway between tooth and proximal end.

Prosternum with two short, bluntly rounded, well-chitinized teeth on anterior margin, one each side of the narrow, shallow, median sinus. Sides nearly straight, very slightly converging caudad. A little wider than long, the ratio being about 19:18; 1.63 times longer than the greatest length of femuroid. No trace of chitinous lines.

Dorsal plates deeply bisulcate. A conspicuously impressed median longitudinal sulcus also evident on the anterior plates especially. On most plates a strongly impressed transverse sulcus a little in front of the caudal margin. Hairs very short, sparse.

Anterior prescuta very short, gradually increasing caudad, but still short in caudal region.

Anterior spiracles very large, vertically subovate, gradually assuming the circular form caudad. First spiracle much the largest, the others gradually decreasing in size caudad, the most posterior ones being very small.

Ventral plates marked with a strong median longitudinal sulcus which is crossed between middle and caudal margin by a weaker transverse sulcus, impression deepest at point of crossing. On the anterior plates the median sulcus bifurcates widely cephalad, in a
somewhat Y form. Last ventral plate very narrow; its anterior border triangular; caudal margin straight or nearly so; sides moderately converging caudad, straight; plate $2.33+$ times longer than greatest width.

Tergite of last pediferous segment with sides substraight and only slightly converging caudad; caudal margin weakly convex. Plate only two thirds as wide as long. Last prescutum long and rather narrow.

Coxopleurae inflated and much elongate, crowding cephalad toward bases of penult legs. Densely porose with numerous small pores as shown in the figures.

Anal-legs very much longer and more robust than the penult; proportionately slender, the articles decreasing regularly in diameter from the femur distad. Articles from the prefemur to the first tarsal inclusive somewhat clavately enlarging distad; second tarsal article of nearly uniform diameter or a little decreasing in width distad. At end of second tarsal, joint a minute, membranous but clearly separated, appendage or article bearing short hairs.

Anterior legs more robust than those of the posterior region.
Pairs of legs 79 .
Length $52-58 \mathrm{~mm}$.
Locality.- Cuba: Soledad, near Cienfuegos (Thomas Barbour). Type, M. C. Z. 1757; two specimens, Type and Paratypes, M. C. Z. 1756.

## Telocricus frater, sp. not.

Dorsum ochraceous, the head nearly of same color. Antennae and legs yellow.

Head 1.55 times longer than wide. A little widest near caudal end of the frontal region, though only slightly narrowing caudad. Sides straight or nearly so back to the rounded caudal corners. Anterior margin substraight. Caudal margin straight. Basal plate much covered by the head and the first dorsal plate, the exposed portion being fully six times as wide as long.

Antennae rather thick, a little attenuated distad; three times longer than the head. Ultimate article much shorter than the two preceding articles taken together, being only about three fourths as long.

Claws of prehensors stout; when closed extending widely beyond front margin of the head as usual. Claw armed at base with the usual stout, conical black tooth. Femuroid bearing at its distal end a black tooth somewhat stouter than that of the claw, the tooth conical,
distally rounded and projecting cephalad of directly mesad; femuroid only vaguely bulging proximad of the tooth.

Anterior margin of prosternum armed with two pale nodular teeth. one each side of the narrow and shallow sinus, these much closer to each other than either is to the corresponding prehensor. Sides nearly straight, only very slightly converging caudad. Wider than long in ratio 21:19. Nearly 1.4 times longer than greatest length of femuroid.

Dorsal plates as usual showing in part a median sulcus in addition to the paired ones.

Prescuta short to very short.
Anterior spiracles large, vertically subelliptic, somewhat narrower ventrally than dorsally. Decreasing in size caudad and gradually becoming circular, those of the caudal region small as usual.

Ventral plates with the usual deep median longitudinal sulcus which is deepest when crossed by the weaker transverse sulcus behind middle.

Last tergite with sides straight, distinctly and considerably converging caudad. Caudal margin straight. Plate much longer than wide (ratio about 19:15).

Last ventral plate narrow. Sides conspicuously converging caudad, somewhat incurved toward anterior end and excurved toward the caudal.

Coxopleurae much enlarged and elongate, densely finely porose as usual.

Anal legs much longer than the penult; nearly as in cubae.
Pairs of legs 65.
Length near 26 mm .
Locality.-Cuba: Monte Verde (Charles Wright). Type, M. C. Z. 1727; one specimen.

## Telocricus major, sp. nov.

Head and anterior portion of dorsum dark ochraceous, with a paler median longitudinal line; becoming yellow caudad. Antennae ochraceous. Prosternum chestnut, the prehensors paler, more ochraceous. Venter anteriorly dark ochraceous, caudally becoming yellow like the dorsum.

Body gradually and conspicuously narrowed caudad from the middle but scarcely at all narrowing cephalad. Body and legs in caudal region densely clothed with fine short hairs, these becoming more and more sparse cephalad.

Head anteriorly semicircularly rounded; caudal margin wide,
straight; very slightly wider just in front of caudal corners than anteriorly; sides straight between rounded anterior and posterior corners. Frontal suture not evident. Plate $1.6+$ times longer than wide. Basal plate considerably overlapped the exposed portion in type being five times wider than long, but the shortness may have been caused in part by shrinkage of full dorsal plate over the basal in the alcohol; but measuring entire length of plate caudad of head gives a ratio of width to length of $4: 1$.

Antennae robust, short, only $2+$ times longer than the head. Articles moderate; the ultimate only three fifths as long as the two preceding ones taken together.

Claws of prehensors when closed extending to distal end of the second antennal article. Claw armed at base with the usual stout, subconical, distally rounded black tooth. Tooth near distal end of femuroid of about same size and form as that of claw; femuroid broadly bulging between tooth and proximal end.

Anterior margin of the prosternum bearing the usual two teeth; these distally well rounded and somewhat nodular, not so close together as in the preceding species, the distance between them nearly equalling that between each one and base of corresponding femuroid. Sides straight, only very slightly converging from anterior end to caudal corners. Exposed portion nearly of same length as breadth, total length of median portion when all is measured being greater than the width.

Anterior prescuta very short, the prescuta becoming of moderate length in caudal region.

Anterior spiracles very large, vertically subovate, gradually decreasing in size caudad and becoming circular, those of the caudal region very small.

Anterior sternites with the median longitudinal sulcus deeply impressed, crossed at or a little behind middle by a wider transverse sulcus, the impression deepest at place of crossing, sulci weaker on caudal plates.

Last ventral plate very narrow and long, sides incurved, more strongly converging than in cubac; caudal corners obliquely truncate; caudal margin straight; anterior margin strongly convex. Anterior portion of plate densely clothed with fine very short hairs which are more sparse on other parts of plate.

Coxopleurae large, elongate as usual. Densely finely porose. Densely clothed between pores with fine and very short hairs.

Last dorsal plate proportionately narrow and long; twice as long as its greatest width; almost as wide caudad as cephalad; sides a little incurved between ends; caudal corners oblique; caudal margin weakly incurved.

Anal legs greatly exceeding the penult in length. Slender, the
tarsal articles especially so. Terminal membranous article minute, bearing very short hairs. Hairs short, dense, evenly distributed, like those of other parts of caudal portion of body.

Pairs of legs 89 (ㅇ ) .
Length near 80 mm .
Locality.- Cuba: San Diego de los Baños. Type, M. C. Z. 1728; one specimen.

## Telocricus multipes, sp. nov.

Body light lemon-yellow anteriorly, paler yellow posteriorly: Head and prosternum darker. Antennae yellow. Legs yellow with the posterior pairs very pale.

Body very slender, gradually narrowing to the caudal end.
Frontal plate not discrete. Head widest anteriorly; sides nearly straight, considerably converging caudad. Anterior margin semicircularly rounded, indented as usual between the antennae. Caudal margin straight; 1.45 times longer than wide. Basal plate largely overlapped by the head, the exposed portion being in the type eight times wider than long.

Antennae moderate, in type being 2.6 times longer than the head. Ultimate article pointed, a little shorter than the two preceding ones taken together. Other articles mostly short. The distal seven or eight articles subdensely clothed with fine short hairs, the others with sparse long bristles arranged chiefly about proximal ends.

Claws of prehensors when closed attaining or a little exceeding the distal end of the first antennal article. Claw at base with a black, acutely conical tooth and a small protuberance distad of this as usual. Femuroid with a stouter subconical black tooth at distal end, with no protuberance proximad of it.

Median sinus of prosternum narrow, semicircular at bottom, sides vertical. A relatively broad nodular elevation each side of sinus. Sides straight and parallel or nearly so. Exposed portion wider than long in ratio $11: 10 ; 1.6$ times longer than greatest height of femuroid.

Prescuta very short in anterior region, gradually increasing and becoming moderately long caudad.

First spiracle large, very much exceeding the second in size; subcircular or vertically a little elongate. Others strictly circular, decreasing caudad and in posterior region becoming minute.

Median longitudinal sulcus of sternites very deep, crossing entire length of plate, transverse sulcus more or less vague.

Last ventral plate very narrow, longer than wide, strongly narrowed caudad, sides incurved.

Tergite of last pediferous segment with caudal margin strongly rounded; sides but slightly converging caudad; narrower than the penult tergite.

Coxopleurae strongly enlarged but less elongate than usual. Densely, finely porose as usual.

Anal leg much exceeding the penult, moderately thickened in the male. Second tarsal article slender, with the usual minute membranous appendage at its end.

First legs considerably shorter and more slender than the second which are of full size. Anterior legs clearly shorter and stouter than the posterior ones.

Pairs of legs 113 ( $0^{7}$ ).
Length about 35 mm .
Locality.- Haiti: Mannville, December, 1912 (W. M. Mann). Type. M. C. Z. 1717; one male.

This is the most aberrant species of the genus.

## Lestophilus, gen. nov.

Head without evident frontal suture. Basal plate wide, largely overlapped by the cephalic plate, the exposed portion being very short. Dorsal plates bisulcate.

Antennae short, filiform.
Labrum free, tripartite. The median piece of good size, not at all overlapped by the lateral; its free margin with a series of stout conical teeth which are much less slender and spiniform than in Taiyuna (six in genotype). Lateral pieces fringed with many slender spinescent processes which are more numerous than in Taiyuna.

Outer process of first maxillae distinctly biarticulate, bearing two very long membranous lappets. Inner process set off by a distinct suture. Coxae completely coalesced. Second maxillae with coxae almost completely separated at middle, there being but a pale membranous connective or isthmus. The entire anteromesal border, or all excepting most mesal end, more strongly chitinous and at times appearing almost as a separate sclerite (Plate 5, fig. 4). Pleurosternal suture strongly marked; pore situated mesad of the suture a little in front of middle of its length and opening through the mesal margin. The sclerite at angle small, not at all enlarged or extended cephalad as in Teloericus and Nesidiphilus and no median chitinous process present (Plate 5, fig. 5). Palpus triarticulate; terminating in a large simple claw; none of the joints with processes.

Prehensors large, conspicuously exposed at the sides and projecting much beyond front margin of the head. Claw armed at base with a
stout conical black tooth. Femuroid armed toward distal end with a larger stout, distally rounded process or tooth which is less strongly chitinized than that of the claw and is pale like that of Nesidiphilus.

Prosternum without chitinous lines. Anterior margin with two teeth.

Ventral pores few; present on the anterior plates in a narrow transverse band in front of the caudal margin.

Spiracles all circular or the first one a little vertically elongate and much larger than the third one.

Last ventral plate intermediate in size, varying across the anterior end from slightly wider than long to a little longer than wide; sides strongly converging caudad.

Tergite of last pediferous segment mostly very broad and almost wholly, concealing the coxopleurae in dorsal view. Not strongly narrowing caudad. As wide as penult tergite to a little narrower with sides more converging; equal in length and breadth to wider than long.

Coxopleurae moderately inflated, not unusually elongate, not at all exposed at sides of last prescutum. Pores small and numerous; most dense on ventral surface; absent from caudal end and above excepting proximally where they open near and beneath the edge of the tergite and beneath border of prescutum.

Anal pores present but small.
Anal legs with six articles distad of coxopleurae. Clawless.
Genotype.- L. paucipes, sp. nov.

Lestophilus paucipes, sp. nov.
Ochraceous or in some clear yellow caudally. Head darker, of dilute chestnut tinge, darker along sides and in region of the frontal suture. Legs yellow. Prosternum and prehensors dilute chestnut like the head. Venter pale ochraceous to clear yellow.

Body moderately robust. From the middle region conspicuously narrowing to the caudal end but only very slightly narrowing cephalad.

Cephalic plate widest at junction of frontal and caudal divisions; semicircularly rounded cephalad and the sides converging caudad; the caudal corners rounded as usual; caudal margin straight or weakly widely incurved. Longer than wide in ratio 7:5. Place of frontal suture taken by a vague, incomplete pale line. Hairs short and very sparse. Basal plate largely overlapped by the cephalic plate; the exposed portion very short, in type being 6.44 times wider than its median length but in some specimens even as much as 13 times wider.

Antennae short and thick, near 2.5 times longer than the head. Ultimate article distally obliquely truncate; shorter than the two preceding articles taken together.

Claws of prehensors when closed extending much beyond anterior margin of head, attaining distal end of second antennal article. Claw at base with a stout conical black tooth just distad of which is a pale protuberance. Femuroid at distal end with a much thicker, paler, distally rounded process or tooth extending in a distomesal direction; near middle of length showing also a slight rounded protuberance.

Prosternum with anterior margin bearing two acute teeth close together, the sinus between them being narrow and not deep, its bottom straight. Sides subparallel from anterior end to rounded caudal corners. Wider than long in about ratio $7: 6 ; 1.54$ times longer than ectal height of femuroid.

Dorsal plates deeply bisulcate; a pair of weaker intermediate sulci more or less developed on some of the plates or in place of these a single median sulcus on most anterior plates. A transverse sulcus, angulate at middle, evident on some of anterior plates.

Anterior prescuta very short; the others increasing in length caudad and becoming long in the middle and posterior regions.

Spiracles all circular; the anterior one much larger than the third with the second intermediate; others of moderate size and not much varying from anterior to posterior regions.

Ventral plates with a distinctly impressed median longitudinal furrow which is deepest at middle of length, in some plates with a vague transverse furrow crossing this at middle.

Ventral pores free; present on anterior plates in a narrow transverse band across caudal border. Last ventral plate with sides conspicuously converging caudad; straight or a little incurved. Width across anterior end to width across caudal as $9: 5$; length to greatest width as $10: 9$, twice the width at caudal end.

For dorsal plate see Plate 5, fig. 6.
Coxopleurae of anal legs moderately enlarged. Pores small and numerous both below and above but not present on most caudal portion ventrally and on a still larger caudal area dorsally.

Anal legs much longer than the penult. Slender; the last article slender and moderately narrowing distad. Hairs moderately long, sparse. Clawless.

Pairs of legs in most cases 45 ; rarely 43 or 47 .
Length 23 to 35 mm .
Locality.- Mexico: Hidalgo, Guerrero Mills (W. M. Manu). Type, M. C. Z. 1730; many specimens, Type and Paratypes, M. C. Z. 1750.

## Lestophilus didimus, sp. nov.

Dorsum yellowish, pale ochraceous anteriorly. Head darker, of a dilute chestnut cast. Legs yellow, the antennae a little darker. Prosternum and prehensors dilute chestnut. Venter yellow.

Body conspicuously narrowed caudad but as usual only slightly narrowed cephalad.

Head anteriorly subsemicircularly rounded but anterior corners somewhat angular. Narrowed from frontal region caudad, caudally abruptly rounding in mesocaudad with a very short caudal part having sides again subparallel. Caudal margin straight. $1.45+$ times longer than wide. Basal plate 2.6 - times wider than long; as long mesally as at sides; its width anteriorly equalling the width of the narrowed caudal division of the cephalic plate.

Antennae short and proportionately thick; 2.2 times longer than the head plate. Lltimate article distally conically rounded, about equal in length to the two preceding articles taken together.

Claws of prehensors when closed extending a little beyond distal end of the first antennal article. Claw armed at base with a conical subacute black tooth. Femuroid with a paler, distally rounded stout process or tooth of usual type and a small, rather vague protuberance proximad of this.

Prosternum with two small, well-chitinized conical teeth close together, one at each edge of the narrow, shallow median sinus. Prosternum a little widest across anterior end. Exposed portion wider than long in ratio $47: 43 ; 1.65$ times longer than greatest length of femuroid.

Anterior prescuta very short; the others gradually increasing in length toward the caudal end where they are of moderate size. Each prescutum with a single transverse row of short straight hairs, each scutum having a transverse row of fewer similar hairs across caudal border and another one across the anterior border.

Spiracles all circular. The anterior one much the largest with the second intermediate in size, the others decreasing caudad, mostly small.

Sternites with the usual median longitudinal sulcus which is deepest at or a little caudad of its middle where crossed by a weaker and often indistinct transverse impression.

Ventral pores few; as usual in a narrow transverse band in front of the caudal margin.

Coxopleurae of last pediferous segment moderate in size. Pores small, numerous, not dense; occurring above and below, but above confined to proximal end where in part covered as usual.

Anal legs much longer than the penult; slender; clawless as always. Bristles sparse, moderate, chiefly at distal ends of articles.

Pairs of legs 47.
Length 22 mm .
Locality.- Mexico: Hidalgo, Pachuca (W. M. Mann). Type, M. C. Z. 1729; one specimen.

Lestophilus haitiensis, sp. nov.
Ochraceous, clearer yellow caudad. Head darker, of somewhat chestnut cast. Antennae ochraceous. Prosternum and prehensors like head. Venter like dorsum or but little paler. Legs yellow.

Body slender, a little narrowed cephalad; gradually and conspicuously narrowed caudad.

Anterior margin of head nearly straight or a little arcuate; anterior corners oblique. Caudal margin straight. Head widest just back of frontal region. Sides nearly straight, converging caudad to the widely rounded caudal corners. Head a little constricted at frontal region; 1.4 times longer than wide. Basal plate largely overlapped by the head, the exposed portion between 5 and 5.5 times wider than long.

Antennae nearly three times as long as the head plates; stout; moderately attenuated distad. Ultimate article not narrowed distad, apically rounded; about four fifths as long as the two preceding articles taken together.

Claws of prehensors stout, finely serrulate within proximally; when closed reaching to between proximal and distal end of the second article; armed at base with a stout subconical black tooth which is slightly bent caudad at tip; first distad of the tooth a small dark nodular eminence. Femuroid with a stout, subconical, distally blunt or truncate tooth as usual; also with a small dark protuberance immediately proximad of basal oblique suture.

Anterior border of prosternum with two distinct nodule-like teeth about as far from each other as each is from the femuroid of the same side. Sides straight, a little converging caudad. Wider than long in ratio 32:29.

Dorsal plates bisulcate as usual. The anterior ones, at least, also showing a distinct median longitudinal sulcus. A distinct transverse sulcus across plates a little in front of the caudal margin.

All prescuta short, those of the anterior region especially so.
First spiracle greatly exceeding the second one in size, subcircular or slightly vertically elongate. All others circular; gradually decreasing in size caudad and in the posterior region becoming very small.

Ventral plates with the usual median longitudinal sulcus and the weaker transverse one. Last rentral plate narrow, longer than the
greatest width in about ratio $8: 7$. Sides concave, diverging more strongly near anterior end.

Coxopleurae strongly inflated. Pores small and numerous excepting for the usual pore-free areas above and less markedly below at caudal end.

Anal tergite broad; very slightly wider than long; sides convex, converging caudad; caudal margin rather wide, straight.

First legs a little shorter and considerably more slender than the second. Anterior legs more robust than the posterior ones.

Anal legs in the female considerably longer than the penult; slender. Distal article without membranous appendage. Short hairs uniformly distributed with much longer ones at or toward the distal ends of articles.

Pairs of legs 57.
Length about 29 mm .
Locality.- Haiti: Furey (W. M. Mann). Type, M. C. Z. 1713; one female.

General color of body yellow. Head with basal plate, prosternum, and prehensors very dilute chestnut, anteunae testaceous. Legs pale vellow.

Body conspicuously narrowed caudad as usual but of nearly uniform width over middle and anterior regions.

Head with sides between caudal corners and frontal region straight and only slightly converging caudad. Sides of frontal region convex, converging to ectal side of antennae. Anterior and posterior margins truncate; 1.46 times longer than wide. Hairs few, moderate in length. Basal plate with exposed portion $3.66+$ times wider than long.

Antennae long, being in type about 3.77 times longer than the head plate. Articles long. Ultimate article much shorter than the two preceding ones taken together.

Claws of prehensors when closed extending a little beyond distal end of the first antennal article. Claw armed at base with a conical, distally rounded black tooth. Intermediate joints unarmed. Femuroid with a stout, subconical, distally truncate or bluntly rounded dark tooth.

Anterior margin of prosternum with a low dark nodular tooth each side of the narrow median sinus. Sides nearly straight, a little converging from the anterior ends. Caudad to the rounded posterior corners. Exposed portion equal in length and breadth.

Prescuta all short, those of the anterior region especially so.

Tergites with the paired sulci distinct as usual. A median sulcus also commonly clearly impressed.

Anterior spiracles large, vertically subelliptic. The first one largest. Others decreasing gradually caudad and beyond the first few becoming strictly circular.

Ventral plates with a median longitudinal sulcus which is deepest caudad.

Ventral pores more numerous than usual in the genus; arranged in a transverse band in front of the caudal margin, the band being widest at the middle when it is somewhat extended cephalad along the groove. Last ventral plate narrow. Sides a little concave cephalad but mesally straight, converging caudad, abruptly a little more strongly so toward caudal end. Caudal margin straight.

Coxopleurae considerably inflated. Pierced by numerous small pores above and below as usual, fewer on lateral surface and caudal end poreless as usual, the pore-free area largest above.

Last tergite somewhat narrower than the preceding one, leaving the coxopleurae more exposed above than usual in the genus. Sides straight, moderately converging caudad. Caudal margin straight. Nearly equal in length and breadth or but slightly longer.

Anal legs in the female longer than the penult, slender, the joints decreasing in diameter distad. Last tarsal joint especially slender, narrowing distad. Hairs mostly long, sparse.

Anal pores distinct.
Pairs of legs 77 (ㅇ ).
Length about 36 mm .
Locality.- Haiti: Petionville, November, 1912 (W. M. Mann). Type, M. C. Z. 1712; one female.

## GEOPHILIDAE.

## PIESTOPHILINAE.

## LEPTOPHILUS, gen. nov.

Head without frontal suture. Basal plate very wide. Dorsal plates bisulcate.

Labrum free; tripartite. Median piece large, armed with a series of stout conical teeth (six or seven in genotype). Lateral pieces with a fringe of spinescent processes as in Geophilus.

Coxae of second maxillae united at middle only by a weak membranous isthmus. Palpus triarticulate, ending in a simple claw.

Palpus of first maxillae large; consisting of two distinctly separated joints, of which the distal one is large and subconical and the proximal one bears ectodistally a very short membranous appendage or dwarfed lappet. Inner branch rather large, not separated from coxa by a suture; a deep incision separating it from its mate. Coxae fused proximally.

Prehensors small; wholly unarmed. Claws slender; when closed not extending beyond front margin of head.

Prosternum unarmed. Chitinous lines strongly developed.
Ventral pores present in a transverse area a little caudad of middle, the band leading to be divided at middle on the more caudal sternites.

Last ventral plate wide.
Coxopleural pores small; few.
Anal legs consisting of six joints distad of the coxopleura, the last of which bears a well-developed claw. First tarsal joint abruptly smaller than the preceding one and the second tarsal joint abruptly much smaller than the first, the latter being somewhat intermediate in size.

Genotype.- L. carribeanus, sp. nov.
Evidently closely related to Erithophilus but differing especially in the structure of the first maxillae in which the palpus is large with both joints distinctly separated and not reduced and fused at base with coxa and laterally with the inner process. In Erithophilus the two tarsal joints are equally slender whereas in the present genus the first joint is conspicuously thicker than the second (Plate 3, fig. 6).

## Leptophilus carribeanus, sp. nov.

Entire body with legs, antennae, and frontal region of head yellow. Head darker over posterior portion.

Body slender; of nearly uniform width throughout, being only slightly narrowed caudad.

Caudal margin of head widely incurved; anterior margin truncate or slightly angulate at middle. Head widest caudad, the sides being convex and moderately converging cephalad. Equal in length and breadth. Exposing prehensors at sides. Prebasal plate slightly exposed. Basal plate large; very wide; sides convex, moderately converging cephalad. Slightly more than twice as wide as long.

Antennae long and slender; filiform, scarcely narrowing distad; 4.5 times longer than the head.

Prehensors small. Claws small and slender, when closed not attaining the front margin of the head. Prehensors wholly unarmed.

Margin of prosternum between prehensors forming an obtuse reentrant angle; wholly unarmed. Sides convex, strongly converging caudad. Chitinous lines strongly developed, complete: 1.36 times wider than long.

Anterior prescuta short, the median and posterior ones becoming long.

Spiracles all circular or the first one a little vertically elongate. First larger than the second, the others gradually decreasing caudad and in the posterior region minute.

Anterior ventral plates with the caudal margin angularly produced and extending into a corresponding shallow excavation in anterior border of succeeding plate. The excavation expanding on sternites from twelfth to twentieth into a clearly limited, large, transversely elliptic depressed area which is strongly chitinized.

Last ventral plate wide; wider than long; sides convex, converging caudad; caudal margin weakly concave over entire length (Plate 4, fig. 2).

Ventral pores present on anterior sternites in a transverse band a little caudad of middle. Pores also present on caudal plates but fewer the area showing a tendency to be divided at the middle. The pores detected on sternites of middle region of body.

Coxopleurae small, not inflated. Pores small, few; opening beneath edge of sternite.

Dorsal plates distinctly bisulcate.
Last dorsal plate very broad. As wide anteriorly as the penult tergite. Sides convex, strongly converging caudad, the caudal end being rather narrow, rounded.

First pair of legs a little shorter and more slender than the second which are nearly as large as the third. Anterior pairs of legs shorter and stouter than the posterior.

Anal legs very much longer and thicker than the penult. In the male much inflated, a little thicker dorsoventrally than laterally. Second tarsal article abruptly and greatly more slender and the first article intermediate but still much more slender than the proximal ones. Claw well developed. Hairs sparse, moderately long.

Pairs of legs $60\left(\mathrm{o}^{7}\right)$.
Length near 30 mm .
Locality. - Swan Island, April 13, 1913 (George Nelson). Type, II. C. Z. 1716; one male.

## LITHOBIOMORPHA.

LITHOBIOIDEA, superfam. nov.
Proposed to embrace the Lithobiidae sens. str., Ethopolidae, fam. nov. (Ethopolys, Bothropolys and allies), Watobiidae, and Gosibiidae, fam. nov. (Gosibius, Arenobius and allies) in contrast with the Henicopoidea, superfam. nov. (the Henicopidae).

> GOSIBIIDAE, fam. nov.

All but one or two species of the known lithobioid fauna of Mexico belong to genera of this family, which ranges into the southern United States, extending in California as far northward as Oroville and northeastward to Tennessee and North Carolina.

## Atethobius, gen. nov.

Head without distinct lateral marginal breaks much as in Bothropolys.

Antennae composed of numerous articles, numbering above forty. Eyes composed of seriate ocelli.
Prosternal teeth $2+2$. Spines ectal in position; stout and tooth like.

Posterior angles of the seventh, ninth, eleventh, and thirteenth dorsal plates, strongly produced, these plates appearing deeply mesally excavated posteriorly, processes broad and rounded. The fourteenth dorsal plate greatly enlarged, being distinctly wider than any of the more anterior plates and completely extending over and concealing the reduced fifteenth plate and the anal coxae.

Coxal pores uniseriate.
Claw of female gonopods large, strictly entire. Spines stout, conical.

Tarsi of all legs biarticulate. None of posterior coxae armed either laterally or dorsally.

Anal legs with two claws, dorsal spines $0,0,3,2,0$. Dorsal spines
of penult legs $0,0,3,2,2$. The anal leg in the male bears a lobe at distal end of tibia on mesal side.

Genotype.- A. mirabilis, sp. nov.
This genus is remarkable because of the greatly enlarged tergite of the fourteenth segment, a feature at once separating it from all others.

Atethobics mirabilis, sp. nor.
Dorsum chestnut. Head back of the suture and the first dorsal plate a little darkest. Antennae typically darker distad than proximad.

Antennae reaching to middle of the fifth segment; articles above 40 , in type being 43 .

Eyes composed of about 13 ocelli in four series: c. g., $1+3,4,4,2$. Single ocellus large, subcircular, pale. Most caudal ocellus of top series much larger than the others but smaller than the single one, often pale. Other ocelli black.

Prosternal teeth acute; well separated; the inner one on each side a little larger than the outer; line of apices distinctly recurved. Spines stout, more or less dentiform.

Posterior angles of seventh, ninth, eleventh, and thirteenth plates strongly produced; processes broad and long, distally more or less rounded. Fourteenth plate greatly enlarged, subcircular, covering the fifteenth.

Coxal pores large, circular, mostly $3,4,4,3$.
Claw of female gonopods entire as usual.
Spines of penult legs, $\frac{0,0,3,2.2}{0,1,3,3,2}$; of the anal $\frac{0,0,3,2,0}{0,1,3,2,0}$, with two claws. None of coxae armed.

Anal legs in male slender and short. The tibial process small, subcylindric, the article at its level being about 3.66 times as wide as the process is thick.

Length up to 24 mm ., that of the type being 22.5 mm .
Locality.- Mexico: Distrito Federal; Esclava (O. W. Barrett). Type, M. C. Z. 1733.

Delobius, gen. nov.
Head with lateral marginal breaks small but distinct.
Antennae short or intermediate; composed of thirty-six or more articles.

Eyes composed of seriate ocelli; the ocelli few.

Prosternal teeth $3+3$ (or $3+4$ ). A sinus present, wide, and semicircularly rounded at bottom. Spines ectal in position, small and bristle like.

Posterior angles of ninth, eleventh, and thirteenth dorsal plates produced. Fourteenth plate normal.

Coxal pores circular; uniseriate.
Claw of female gonopods long and entire. Spines $2+2$, stout, subconical.

Anal legs in male not specially modified but penult with fifth joint bearing at distal end on mesal or caudal surface a longitudinally placed swelling or crest suggesting that of species of Guanibius but proportionately larger and different in position.

Posterior cosae either wholly unarmed, or the last two or three armed dorsally while the anal pair may also be armed laterally: Dorsal spines of anal legs $1(0), 0,3,2,0$; ventral, in genotype, $0,1,2$, 2, 2 ; claws 2. Dorsal spines of penult legs $1,0,3,2,0$ or $0,0,3,2,0$. Ventral spines of first legs $0,0,0,0,1$; dorsal $0,0,2,1,1$. First nine to thirteen pairs of legs with but a single dorsal tibial spine.

Length averaging near 20 mm .
Genotype.- D. simplex, sp. nov.
In lacking a median ventral spine on the third and fourth segments of all legs, this genus is unlike any other lithobioid known to the writer.

## Delobius smplex, sp. nov.

Dorsum chestnut or with some of middle plates deep brown, with no distinct chestnut tinge; with irregular dusky streaks. Head like dorsum or color slightly clearer. Antennae dark brown proximally, paler and somewhat rufous distad. Prosternum and prehensors dilute chestnut, the latter of pale ferruginous cast distad. Venter light brown, the caudal plates darker. Legs brown; the posterior pairs darker, the tarsi, excepting proximal portion of first article, dilute ferruginous.

Body in male type $8.5+$ times longer than width of tenth plate Width of head and of first, third, eighth, tenth, and twelfth plates to each other as $53: 47: 49: 56: 55: 52$.

Head wider than long in about ratio 53:50. Head wider just back of eyes than at breaks. Caudal margin mesally weakly incurved. A longitudinal median sulcus which is deepest in front of frontal suture but which crosses the latter and is traceable to a transverse furrow some little distance in front of the caudal marginal thickening.

Antennae short, not rery slender distad. Composed of $36-38$
articles. First three articles moderate, the others short and very short. Ultimate article short, rounded, subequal to or a little shorter than the two preceding ones taken together.

Ocelli in type 8 to 11 arranged in 3 or 4 series: e. g., $1+1,3,3$; $1+1,3,3,1 ; 1+3,4,3 ; 1+1,3,3,2$. Singles ocellus largest, separated. Others not very distinct. Organ of Tömösvary in outline smaller than the seriate ocelli.

Prosternum near 1.77 times wider than long. Distance between chitinous spots about $1.77+$ times width at level of bottom of sinus; only 2.2 times the dental line. Teeth $3+3$ or $3+4$; not much differing in size; line of apices on each side a little convex with angle between lines at middle thus reentrant. Sinus shallow, broadly u-shaped or subsemicircular. Spine slender and short, on a tubercle just ectad of outer tooth. Margin evenly convexly rounding back from spine to prehensor on each side.

First dorsal plate in measured specimen 1.56 times wider than long. Sides between corners straight or toward middle of length a little incurved, only moderately converging. Posterior angles of ninth, eleventh, and thirteenth dorsal plates produced; the processes narrow and not long, those of ninth plate shortest.

Coxal pores moderately large, somewhat transversely elongate or subelliptic, decreasing on each coxa proximad: 5, 4, 4, 4; 5, 5, 5, 5.

Claw of female gonopods long, subacute, moderately curved. Spines $2+2$, stout and rather short, of the usual subconical form. Mesal edge of first article sharp, strongly chitinized, conspicuously bending out ectad proximally.
Spines of first legs, $\frac{0,0,2,1,1}{0,0,0,0,1}$; of the second, $\frac{6,0,2,2,1}{6,0,0,0,1}$; of the third and fourth, $\frac{0,0,2,2,1}{0,0,0,1,2}$; of the fifth, $\frac{0,0,2,2,1}{0,0,0,2,2}$; of the sixth and seventh, $\frac{0,0,3,2,1}{0,0,0,2,2}$; of the eighth to twelfth, $\frac{0,0,3,2,1}{0,0,2,2,2}$; of the thirteenth, $\frac{1,0,3,2,1}{0,0,2,2,2}$; of the penult, $\frac{1,0,3,2,0}{0,1,2,2,2}$; of the anal, $\frac{1,0,3,2,0}{0,1,2,2,2}$, claws 2. Anal coxae laterally armed but the spine seemingly easily lost. The single dorsal tibial spine is in all cases on the anterior side.

Segments of legs longitudinally furrowed dorsally and ventrally, especially on the more posterior pairs.

Anal legs of male not specially modified. Penult legs with the fifth article at distal end on mesal surface presenting a longitudinally placed, pilose swelling or lobe somewhat similar to but proportionately larger than that borne on the corresponding article in males of Guambius.

Length 19-21 mm.; greatest width of tergites 2.25 to 2.6 mm .
Locality.- Mexico: Hidalgo, Guerrero Mills (W. M. Mann). Type, M. C. Z., 1740; two specimens, Type and Paratype, M. C. Z. 1752.

## Delobius spinifer, sp. nov.

Dorsum brown, somewhat dusky; some plates with a paler median longitudinal stripe. Head concolorous with dorsum. Antennae dusky brown, at very tips paler, yellowish. Prosternum and prehensors brown of a somewhat lighter cast; prehensors rufous distally. Legs brown, the tarsi, of the posterior pairs in particular, brighter, yellowish.

Body slender, only very gradually narrowed cephalad to the third plate which is of same width as the first. Head wider than any of the plates. Width of head and of first, third, eighth, tenth, and twelfth plates to each other as $56: 47: 47: 54: 54: 47$. Head wider than long in ratio 14:13; widest at marginal breaks. Lateral marginal breaks small but distinct, much closer to eyes than to caudal corners. Strongly narrowed in front of eyes, the margin between which and antennae is somewhat concave; margin near mesal side of antennae on each side more strongly chitinous. The anterior median sulcus sharply impressed, not attaining the suture caudad.

Antennae of medium length. Articles 45-46 in type. Articles distad of the third short and very short. Ultimate article much longer than the two preceding ones taken together.

Ocelli $1+3,3,2 ; 1+3,4,2$. Ocelli in type pale and indistinct. Single ocellus well separated, largest, but the first one of the upper series is nearly as large and is much larger than the others of series of which those in bottom row are especially small, smaller than the organ of Tömösvary in outline.

Prosternum 1.84 times wider than long. Distance between chitinous spots 1.84 times width at level of bottom of sinus; 2.2 times the dental line. Teeth $3+3$, small, the most ectal on each side more remote from the median one than the latter is from the most mesal; line of apices on each side slightly convex, omitting the median tooth on each side the line of apices would be straight. Sinus very wide and very shallow, the distance between the teeth at its ends being much greater than between adjoining teeth on each side. Spine small and bristle like, inserted just ectad of ectal tooth. Margin slanting back directly from spine.

First dorsal plate in type 1.51 times wider than long; sides only gently converging caudad, nearly straight cephalad of the rounded caudal corners. Posterior angles of the ninth, eleventh, and thirteenth dorsal plates produced, the processes moderate.

Porigerous areas of coxae moderately depressed. Pores circular: $3,3,3,3$ or with a small additional pore at proximal end on some of the coxae.

Spines of first and second legs, $\frac{0,0,2,1,1}{0,0,0,0,1}$; of the third, $\frac{0,0,2,2,1}{0,0,0,2,2}$; of the
fourth to seventh, $\frac{0,0,2,2,1}{0,0,1,2,2}$; of the eighth and ninth, $\frac{0,0,2,2,1}{0,0,2,2,2}$; of the tenth, $\frac{0,0,3,2,2}{0,0,2,2,2}$; of the eleventh, $\frac{0,0,3,2,1}{0,0,2,2,2}$; of the twelfth, $\frac{0,0,3,2,2}{0,0,2,2,2}$, the dorsal tibial spines equal; of the thirteenth, $\frac{0,0,3,2,2}{0,0,2,2,2}$, the caudal dorsal tibial spine small; of the penult, $\frac{0,0,3,2,0}{0,1,2,2,2}$, claws 3 ; (anal legs missing in type) none of the coxae at all armed.

Tibial process of penult legs of male dorsal in position; shorter and lower than in simplex, more crest like; not very conspicuous.

Length near 20 mm .
Locality.- Mexico: Distrito Federal; Esclava (O. W. Barrett). Type, M. C. Z. 1742; one male.

Closely allied with the preceding species but readily separated by differences in spining of legs (e.g. in total lack of coxal spines); clearly by differences in the position and form of the tibial lobe on penult legs of the male; and by differences in proportions, etc.

## Labrobius, gen. nov.

Lateral marginal breaks of head very weak or obsolete.
Antennae short or intermediate; articles from 29 to 57.
Eyes composed of seriate ocelli. Single ocellus clearly differentiated.

Prosternal teeth $2+2$; line of apices from straight to a little recurved. Spines slender, bristle like. Sinus distinct, more or less u-shaped.

Posterior angles of ninth, eleventh, and thirteenth or of seventh, ninth, eleventh, and thirteenth dorsal plates produced.

Coxal pores circular; uniseriate.
Claw of female gonopods strictly entire as usual, spines stout, subconical, $2+2$.

Anal legs in male with fifth joint bearing at distal end on dorsal or dorsomesal surface a conspicuous, laterally compressed crest.

Posterior coxae dorsally armed or else wholly unarmed dorsally but armed laterally instead. Dorsal spines of anal legs $1,0,3,1,0$ to $0,0,3,2,1$; ventral $0,1,3,2,1$; claws 2 . Dorsal spines of penult legs $1,0,3,2,2$ or $0,0,3,2,2$; ventral $0,1,3,3,1$. Dorsal spines of first legs $0,0,1,1,1$ or $0,0,2,1,1$; ventral, $0,0,0,0,0$ to $0,0,1,1,1$.

Length $10-13 \mathrm{~mm}$.
Genotype.- Labrobius minor, sp. nov.
In addition to the genotype and $L$. delus, sp. nov., L. sontus (Chamberlin) and L. vulcani (Pocock) also belong in this genus.

Labrobius minor, sp. nov.
Dorsum light brown to very deep brown or dull brownish black in individuals in full color. Head concolorous with dorsum or nearly so. Antennae deep colored like the head and either uniform, or, more commonly paler, rufous distad. Prosternum and prehensors dark brown but paler than the dorsum. Legs brown with tarsi, especially in posterior pairs, lighter.

Body unusually broad, varying from only four to six times longer than width of the tenth dorsal plate. Body very strongly narrowed cephalad to the first plate. Widths of head and of first, third, eighth, tenth, and twelfth dorsal plates to each other as $79: 65: 77: 116: 127: 112$.

Head broad, laterally convex; widest at breaks which are weak; anteriorly widely rounded; caudal margin straight. Clearly wider than long, the ratio being close to $15: 14$. A distinct median longitudinal sulcus in front of the suture; head elsewhere smooth. Hairs in part short and in part long, straight.

Antennae of intermediate length; becoming very thin distad. Articles mostly 49 to 57 in number; of these the first three are moderately large and the others very short and closely compacted. Ultimate article clearly longer than the two preceding ones taken together.

Ocelli $1+2,4,5,2 ; 1+3,3,5,2 ; 1+3,3,3,3 ; 1+3,4,4,1$; etc. The single ocellus distinctly largest, subcircular. Other ocelli small, distinct and regular, with the second ocellus of top series nearly always the largest.

Prosternum with teeth $2+2$, relatively close together; the inner tooth of each pair larger than the outer one and the line of apices in adults straight or nearly so. Spine slender, distally extremely fine, inserted a little ectad of outer tooth on dorsal surface proximad of edge. Anterior margin extending a considerable distance ectad from outer tooth almost horizontally and then bending abruptly back and but little ectad of directly caudad, then curving out to prehensor: 1.57 times wider than long. Distance between chitinous spots 1.88 times width at level of sinus; and nearly four times the dental line.

First dorsal plate short, strongly narrowed caudad; varying from 1.8 to 2.16 times wider than long. Posterior angles of the seventh, ninth, eleventh, and thirteenth dorsal plates produced, the processes broad with mesal side long and oblique.

Coxal pores mostly $3,4,4,3$ or $3,4,4,4$, small. The porigerous area usually depressed with an elevated rim along each side.

Claw of female gonopods stout, relatively short, moderately curved, broadest a little distad of base. Spines $2+2$; of the usual subconical form; the outer one of each pair a little longer than the inner. Inner edge of first article strongly chitinized, sharp, excavated proxi-
mally but excavation short and not deep and sometimes concealed; a narrow furrow across base of article. Excavation not always evident, especially in younger specimens.

Anal legs in male not especially crassate; fifth article at distal end on dorsal surface toward the mesal side with a conspicuous, laterally compressed and longitudinally placed crest which in side view is subtriangular, with dorsal surface convex and caudal end highest.

Spines of first legs, $\frac{0,0,1,1,1}{0,0,0,0,0}$; of the second the same as first or $\frac{00,1,2,1 \text {; }}{0,0,0,0,0}$ of the third, $\frac{0,0,1,2,1}{0,0,0,2,1}$; of the fourth, $\frac{0,0,1,2,2}{0,0,0,2,1}$; of the fifth, $\frac{0,0,1,2,2}{0,0,0,2,2}$; of the sixth, $\frac{0,0.2,2,2}{0.0,0,2,2}$; of the seventh, $\frac{0,0,2,2,2}{0,0,0,3,2}$ or ventral spines, $0,0,0,2,2$; of the eighth, $\frac{0,0,2,2,2}{0,0,1,2,2}$ or ventral spines $0,0,1,3,2$; of the ninth, $\frac{0,0,2,2,2}{0,0,1,3,2}$ or ventral spines $0,0,2,3,2$; of the tenth, $\frac{0,0,3,2,2}{0,0,2,3,2}$; of the eleventh and twelfth, $\frac{0,0,3,2,2}{0,0,3,3,2}$; of the thirteenth, $\frac{0,0,3,2,2}{0,0,1,3,3,2}$; of the fourteenth, $\frac{0,0,3,2,2}{0,1,3,3,1}$, claws 3 ; of the anal, $\frac{0,0,3,2,1}{0,1,3,2,1}$ or $\frac{0,0,3,4,0}{0,1,3,2,1}$, claws 3 , the inner accessory large, the outer one small but distinct. Last four pairs of coxae laterally armed, but none armed dorsally.

Length $10-13 \mathrm{~mm}$.; width of tenth plate 1.9 to 2.5 mm .
Localities.-Mexico; Hidalgo; Guerrero Mills; San Miguel; Pachuca (W. M. Mann). Type, M. C. Z. 1737; eighteen specimens, Type, Paratypes, M. C. Z. 1751, and M. C. Z. 1738, 1739.

This species is notable for the relatively great width of the body in the posterior region.

## Labrobius delus, sp. nov.

Dorsum from light to dark brown. Head of similar shade but color typically deeper. Antennae brown proximally, paler distad. Prosternum and prehensors clear brown. Venter paler brown, the caudal plates darker as usual. Legs light brown, the posterior pairs a little more brightly pigmented.

Body moderately narrowed cephalad to the first plate, which is clearly narrower than the plate and much narrower than the head. Widths of head and of first, third, eighth, tenth, and twelfth plates to each other as $74: 63: 67: 80: 80: 74$.

Head subcircular. Wider than long in ratio 37:35. Marginal breaks only obscurely indicated. Caudal margin nearly straight or very weakly incurved. The usual median sulcus in front of the suture and two longitudinal ones on caudal portion.

Antennae rather short. Composed of 29 to 33 articles. Articles
distad of the third short and very short, varying irregularly in length, closely united. Ultimate article rather slender, as long as the two preceding articles taken together.

Ocelli mostly $1+1,3,3$. Single ocellus rertically subelliptic, of almost same size as first one of top series, these two being conspicuously larger than the remaining ocelli. Ocelli distinct and regular, often not contiguous with each other. Organ of Tömösoary in outline of about same size as an average seriate ocellus.

Prosternum 1.48- times wider than long. Distance between chitinous spots 2.3 times width at level of bottom of sinus; 3.9 times the dental line. Prosternal teeth $2+2$; line of apices a little recurved. Sinus between V- and U-shaped. Spine bristle like, inserted a little ectad of outer tooth on same level. Margin extending abruptly ectocaudad from spine.

First dorsal plate in the type 1.53 times wider than long; sides only moderately converging caudad; caudal corners widely rounded. Posterior angles of ninth, eleventh, and thirteenth dorsal plates produced.

Coxal pores small; mostly $3,3,3,3$.
Anal legs of male with the tibial process small, low and inconspicuous.

Spines of first legs, $\frac{0,0,2,1,1}{0,0,1,1,1}$; of the second, $\frac{0,0,2,2,1}{0,0,1,2,1}$; of the third, $\frac{0,0,2,2,1}{0,0,1,2,2}$; of the fourth, $\frac{0,0,2,2,2}{0,0,1,2,2}$; of the fifth, $\frac{0,0,2,2,2}{0,0,2,2,2}$; of the sixth to ninth, $\frac{0,0,2,2,2}{0,0,2,3,2}$; of the tenth and eleventh, $\frac{0,0,3,2,2}{0,0,2,3,2}$; of the twelfth and thirteenth, $\frac{1,0,3,2,2}{0,1,3,3,2}$; of the penult, $\frac{1,0,3,2,2}{0,1,3,3,1}$, the ectal accessory claw obsolescent; of the anal $\frac{1,0,3,1,0}{0,1,3,2,1}$, claws 2 or also a minute ectal accessory claw sometimes evident. No lateral spines on any of the coxae.

Length $10-12 \mathrm{~mm}$.
Locality.- Mexico: Hidalgo, Guerrero Mills (W. M. Mann). Type, MI. C. Z. 1741; six males, Type and Paratypes, M. C. Z. 1753.

> Mexicobius, gen. nov.

Head with marginal breaks present but small.
Antennae very short; articles thirty-five or above.
Eyes consisting of seriate ocelli. Single ocellus clearly differentiated.
Prosternal teeth $2+2$, small and nodular. Anterior edge of prosternum well chitinized, wholly without true sinus. Spines large and stout, much exceeding the teeth in size.

Posterior angles of ninth, eleventh, and thirteenth dorsal plates
produced, those of ninth weakly so. Fourteenth tergite of normal form.

Coxal pores small, circular; uniseriate.
Claw of female gonopods strictly entire as always. Basal spines $2+2$, conically acuminate. Inner edge of first article well chitinized; Article furrowed across base.

Posterior legs of male without special lobes or modifications.
Posterior coxae dorsally and laterally armed in type. Ventral spines of anal legs $0,1,3,2,0$ or $0,1,3,2,1$, rarely $0,1,3,3,1$; dorsal, $1,0,3,1,0$; claws 2 , the accessory large and distinct. Ventral spines of penult legs $0,1,3,3,1$; dorsal, $1,0,3,2$, 1 , more rarely only $1,0,3,1,1$. Dorsal and ventral spines of first legs $0,0,1,2,1$. Legs from second to thirteenth with 2 dorsal tibial spines.

Length up to 18 mm .

## Genotype.- M. hidalgoensis, sp. nov.

This genus is close to Arenobius in its restricted sense with which it agrees in the unusual character of the prosternum. It is most readily distinguished by the large number of antennal articles, the number in Arenobius being fixed at 20. It also differs in wholly lacking the special lobes characterizing the anal and penult legs of males in Arenobius.

## Mexicobius hidalgoensis, sp. nov.

Dorsum clear shining brown to dusky brown, the first plate typically somewhat darker than the others. Head brown of a dilute ferruginous tinge, dusky caudad of the suture. Antennae dusky or blackish brown, rufous at tips and also paler proximally. Prosternum brown, the prehensors similar but rufous distally. Venter light brown, the legs similar to venter, brighter distad; the caudal pairs not clearly differing in color from the others.

Body moderately attenuated cephalad. The widths of head and of first, third, eighth, tenth, and twelfth plates to each other as 72:70: 74:S3:85: S0.

Head widest at level of marginal breaks; widely rounded anteriorly; caudal margin straight. Marginal breaks small but distinct. Weakly punctate. The usual median sulcus in front of the suture. Equal in length and breadth or very nearly so.

Antennae very short; strongly narrowed distad. Articles 35-41; the first two of moderate length, the third shorter and the remaining ones very short and closely crowded; the ultimate article shorter than the two preceding ones together.
Ocelli 14 to 26 in four or, less commonly, (pseudomaturus) in three
series; e. g., $1+3,4,4,4 ; 1+4,4,4,2 ; 1+4,4,3,2 ; 1+4$, $6,6,5,4 ; 1+4,4,3$. Single ocellus largest, contiguous with the others. First ocellus of uppermost series next in size to the single one; the others irregularly decreasing cephalad and ventrad. Ocelli deeply pigmented and commonly not clearly limited from each other, but those of the most ventral row sometimes pale.

Prosternal teeth small, nodular, inserted a little proximad of anterior edge, those of each side well separated. Anterior edge well chitinized, the two side portions meeting at middle in a very obtuse reentrant angle, the angle being but little less than $180^{\circ}$, with no true sinus. Spine on each side inserted at ectal end of anterior chitinous edge; large and stout, greatly exceeding the teeth in size. Edge outside each spine running at first but little caudad of directly ectad and then near middle of its length bending abruptly back more caudad to the prehensors; $1.7-1.77$ times wider than long. Distance between chitinous spots $1.77-1.9$ times greater than width at level of bottom of median reentrant angle; near 4.75 times the dental line.

First dorsal plate moderately narrowed caudad; $1.66+$ times wider than long. Major dorsal plates with two submedian longitudinal furrows which are more deeply impressed on caudal plates. Posterior angles of eleventh and thirteenth dorsal plates strongly produced caudad, those of the ninth more weakly so.

Coxal pores small, circular, $3,4,4,4 ; 3,4,4,3 ; 4,4,4,3 ; 4,5,4,4$.
Claw of female gonopods of moderate length; acute and well curved. Basal spines stout, conically acuminate, more strongly narrowing distally than proximally. Mesal edge of first article sharp, well chitinized, bending ectad proximally, constricted or furrowed across base.

Posterior legs of male without special lobes or modifications; slender, spines of first legs, $\frac{0,01,2,1}{0,0,1,2,1}$; of the second to eleventh, $\frac{0,0,2,2,2}{0,0,2,3,2}$; of the twelfth, $\frac{0,0,3,2,2}{0,0,3,3,2}$; of the thirteenth, $\frac{1,0,3,2,2}{0,1,3,3,2}$; of the penult, $\frac{1,0,3,2,1}{0,1,3,3,1}$ or dorsal spines rarely $1,0,3,1,1$, claws 3 ; of the anal, $\frac{1,0,3,1,0}{0,1,3,2,0}$ or the ventral spines $0,1,3,2,1$, and in one specimen observed as $0,1,3,3,1$, claws 2 , the accessory one large and distinct. Last two pairs of coxae laterally armed.

Length 13-18 mm.
Localities.- Mexico: Hidalgo; Guerrero Mills (type locality); El Chico (W, M. Mann). Type, M. C. Z. 1736; three specimens, Type and Paratypes. M. C. Z. 1735, and M. C. Z. 1734.


[^0]:    ${ }^{1}$ The right leg of one specimen has the tarsus of the Scolopendrides type, the divisions being indistinct and irregular. The tibia of the same leg is of abnormal form, being somewhat bowed ventrad and distinctly constricted toward distal end. The leg is probably a regenerated one.

